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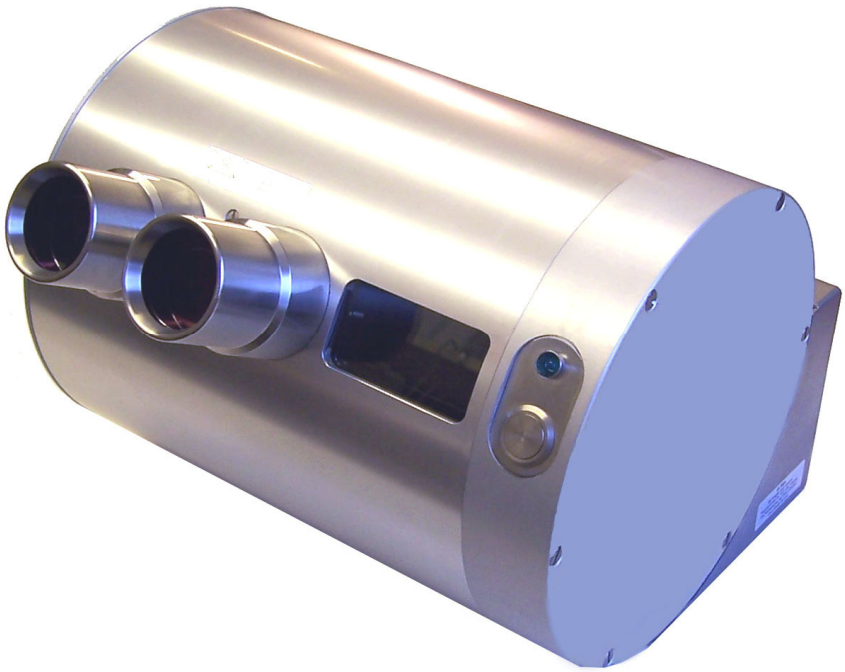
User manual of the 10 slide rotary viewer model 2007-c
07-02-AM-c
motor advance



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Introduction

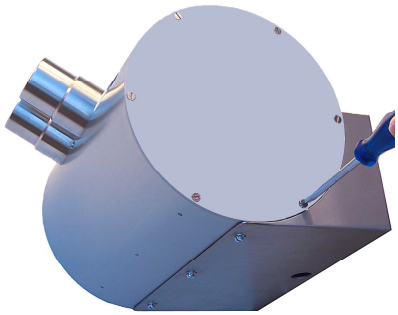
This viewer is the result 30 years of experience in building high quality 3D slide viewers for public use. Each change in the previous models extended the durability, stability and the quality. Especially this 10-slide rotary viewer 2007 has been adapted for the demand to show short 3D slide series to large amounts of public to be informed. To give any idea about the changes with respect to the previous model:

The PCB to control the motor has been updated with integrated power rectifier for 12 and 5 Volts dc. The LED backlight can be adjusted in brightness, the blinking LED on the front can be changed to continues 'on' state. For the external control, the D25 connector and the D15 connector have been removed and replaced by a simple header with the most important signals available.

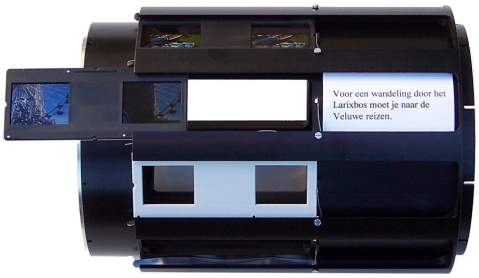
1. First indications for operational use

1.1 Opening the viewer for exchanging the slides.

- For exchanging the slides you have to remove the right cover of the round housing; see the image. That is the side where the text window and the pushbutton are located.
- Remove the 6 bolts.
- Remove the DC adapter plug from the rear side of the drum.
- Now pull gently the right cover away of the main drum and place the whole thing right up on a table.
- Now you can insert or exchange your slides and text cards. Keep the order and position of the slides in mind that they won't be presented up side down!



Picture 1



Picture 2

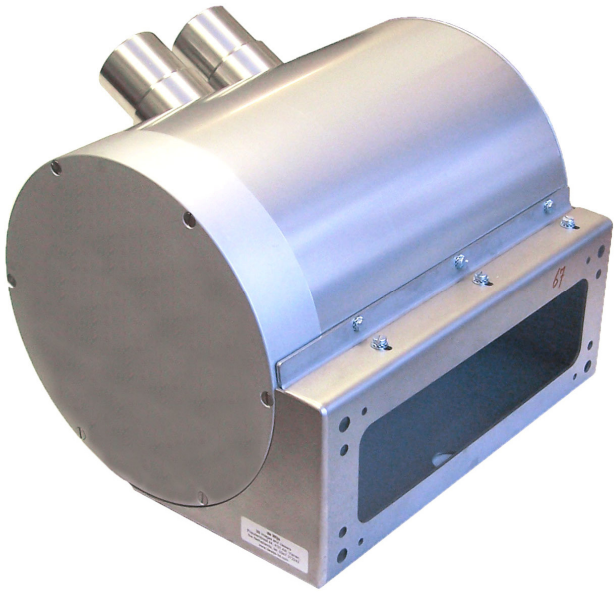
1.2 Were do I place the viewer?

Obviously you already have chosen a spot for the viewer in your museum, exhibition or other public environment. Here are some considerations that might help you to check the spot;

- Keep in mind the height of the viewer. Children and grown-ups both want to look in the viewer!
- Depending on the interest of the viewer, people might form a queue. This could cause congestion for the rest of the public.
- Watch out for sunlight coming through the lenses! The lenses will act like burn glasses on the slides. A few minutes in the sun will cause enough damage to the slide that it should be replaced. Within 1 day, in worst case, you have to replace all slides. You can see this on the slide like tiny little white spots showing the track of the sun during the day.
- Avoid spotlights to be shinning on the lenses. The slides are not going to be burned but it does shorten the lifecycle of the slide.
- When the viewer is to be mounted inside some kind of panel, be sure you can get easy access to the viewer for replacing the slides.

1.3 How do I mount the viewer against a wall?

The 10 slide rotary viewer holds a bracket at the back that has several holes to attach the viewer with screws or bolts against a wall. First you have to remove the 3 bolts on the top of the bracket (see the image) and the bolts underneath the viewer to position the bracket only against the wall. Think about how you want to let the cables run through the bracket; are they going through the wall or do they go through the hole at the bottom of the bracket?



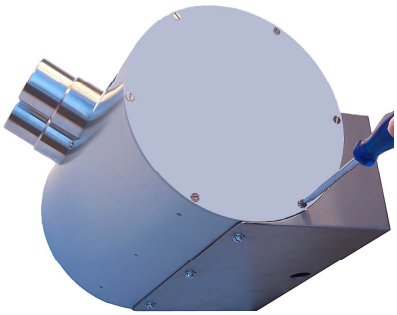
Picture 3

2. Operation

2.1 Four operational modes:

The rotary viewer is able to work in 4 different modes. These modes are configurable using the small switches inside the viewer. To get access to these switches follow the next directions:

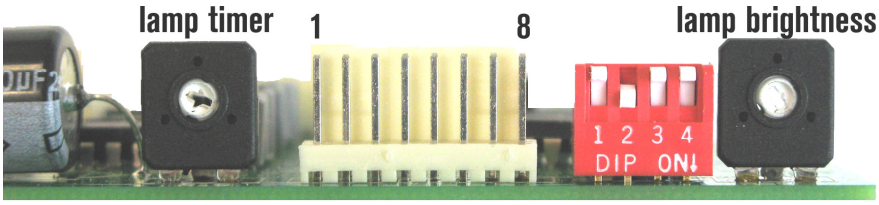
- Removing the 6 bolts of the right cover of the viewer (the side where button is located, picture 4).



Picture 4

Picture 5

- Now you see the round slide drum. Through the bars of the slide drum, you see the red dipswitches (picture 6)



Picture 6

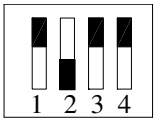
To change the turn- off time of the lamp; turn with a small screw driver to the left or right. You can do this through the slide frame openings of the revolving drum.

Don't take the drum from its axle!

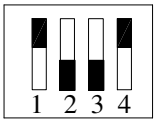
By default the time is set to ± 40 seconds. Turning the trimmer counter clockwise, will increase the time, turning anticlockwise will decrease it.

At the right you see an illustration of the dipswitch.
The black square marks the position of the switch.

Mode 1:
After the pre-set shut-off time, the lamp turns off and the viewer stays at this slide.

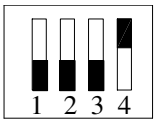


Mode 2:
After the pre-set shut-off time, the lamp turns off and the drum revolves to slide number 1.



Mode 3:
The lamp is always on, after the shut-off time the viewer stays at the current slide.

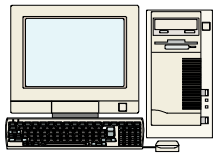
Mode 4:
The lamp is always on, after the shut-off time the drum revolves to slide number 1.



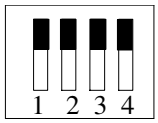
Switch 4 is used to set the blinking LED on the front to continues or not.

3. External control (with PC)

The rotary viewer PCB has an external control facility.
A header of 8 pins allows to control the motor, the lamp, read out the front panel button, the opto switches of the drum positioning (white 8 pin header, see figure 6).



Set all switches of the red dipswitch upwards when you control the viewer externally. Except switch 4 can be lowered to set the front LED to continues.



Header J1 pin information:

Pin number	Description	Logic levels	In -out
1	Ground	0	-
2	Power +5 Volts	5 Volts 200mA (max)	Out
3	Power +12 Volts	12 Volts 200mA (max)	Out
4	Change slide	‘1’ = change (5 Volts)	In
5	Lamp on	‘1’ = lamp on (5 Volts)	In
6	Front panel button	‘1’ = pressed (5 Volts)	Out
7	Opto ‘stop’ for all slides	‘0’ = passing slide stop (5 Volts)	Out
8	Opto first slide position	‘0’= first position (5 Volts)	Out

An external switch / push button across pin 2 and 4 will change the slide.

4 Data

4.1 Technical specifications of the rotary viewer

Slides:

- Slide frame format; 41x101 mm.
- Maximum picture size; 23x33 mm.
- Compatible with RBT frames, mounted between glass maximum 3 mm. Thickness.
- The drum can hold 10 slides and accompanying text cards.

Optics:

- One lens barrel holds 2 achromatic lenses of ∅ 37 mm. f= 120 mm. each.
- Total focal distance is 60 mm.; magnification: 4.2 x
- Lenses are coated on all sides
- Lens separation is fixed to 62 mm.

Illumination:

- The slide is illuminated by a LED backlight.
- The colour temperature is 5500 Kelvin.
- The lamp runs on 12 Volts dc at ± 30mA.

Mechanics;

- The Housing of the viewer is made of plain anodised aluminium. The wall bracket and lens barrels are made of stainless steel.
- The slide drum revolves on ball bearings and don't need any lubrication.
- A 12 Volts motor using a cock wheel mechanism revolves the drum.
- When removing the steel plate at the left side of the viewer (4 bolts), you get access to four M4 bolts. These bolts make it possible to adjust the focus of the slide drum with regards to the fixed lenses. Do NOT un-fasten these bolts, the focus has been adjusted in the factory very carefully!

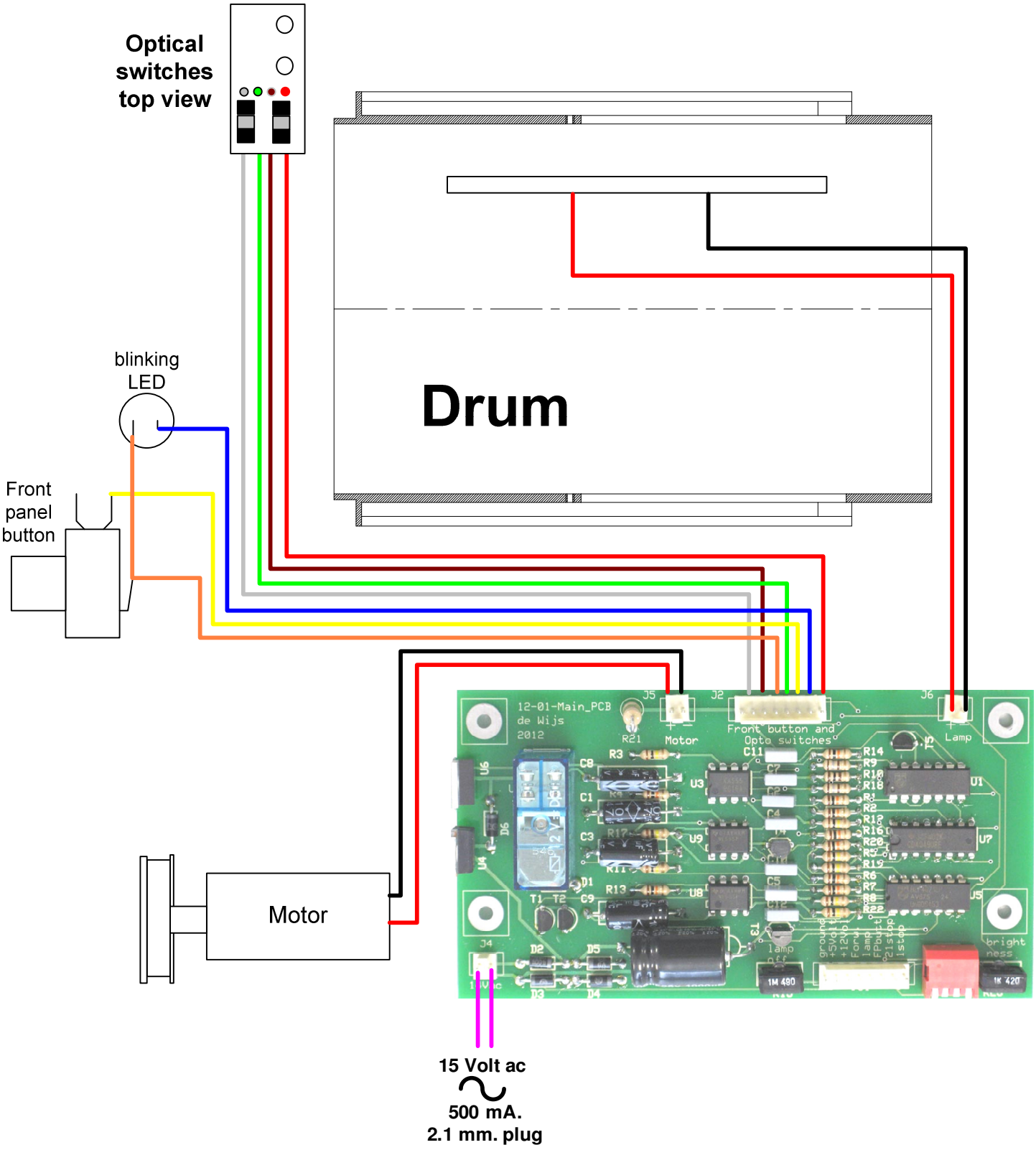
Electronics;

- The whole viewer runs internally on 12 Volts dc. The viewer comes with a 220 Volts AC adapter giving **15 Volts ac. at 500mA**.

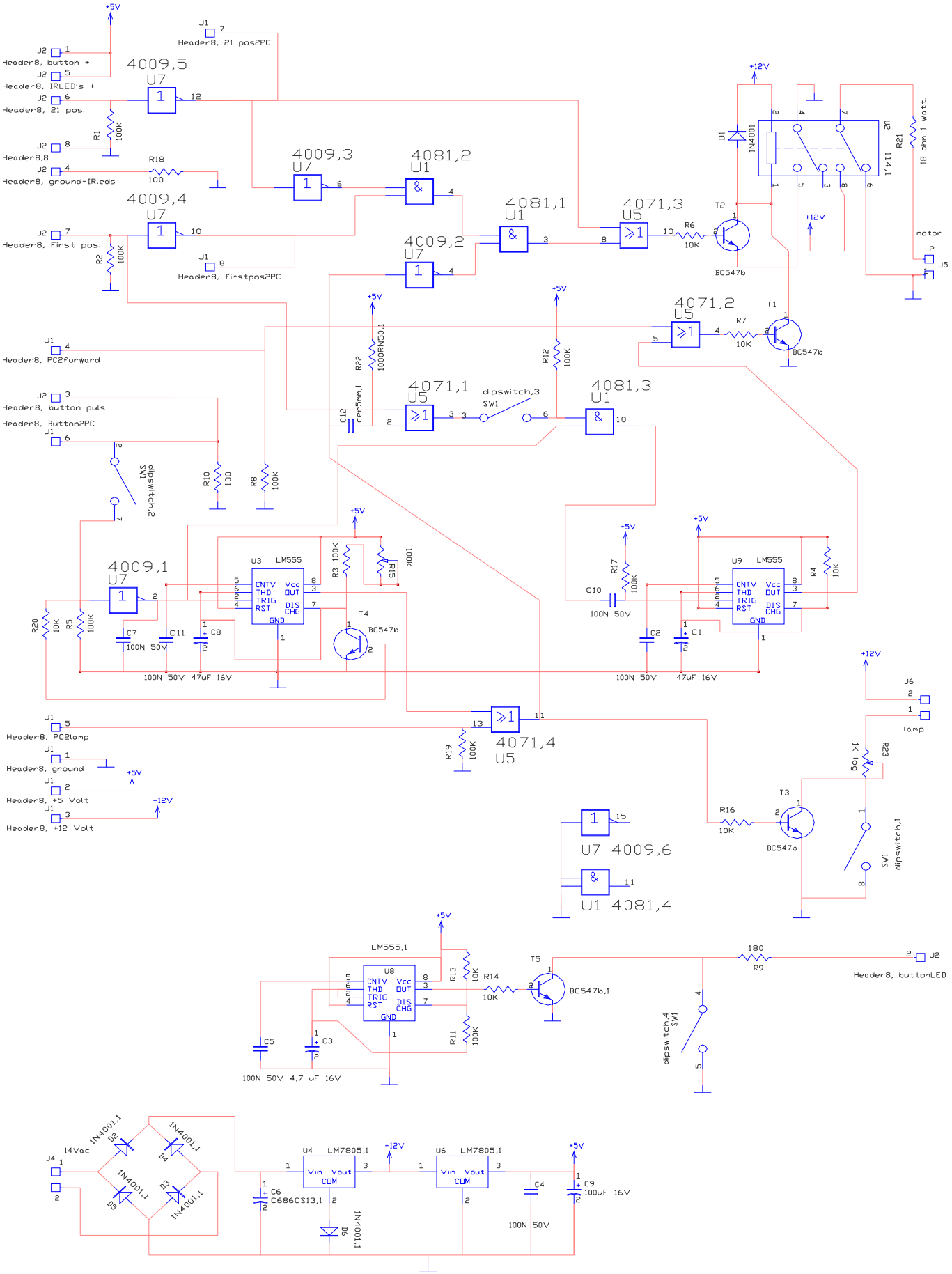
4.4 Electronic component list model 07-02-A-M-c

R1	100K ¼ Watt IR detect
R2	100K ¼ Watt IR detect
R3	100K ¼ Watt
R4	10K ¼ Watt
R5	100K ¼ Watt
R6	10K ¼ Watt
R7	10K ¼ Watt
R8	100K ¼ Watt
R9	180 ¼ Watt
R10	100 ¼ Watt
R11	100K ¼ Watt
R12	100K ¼ Watt
R13	10K ¼ Watt
R14	10K ¼ Watt
R15	1M 0.15 Watt 10 mm. standing Pot.
R16	10K ¼ Watt
R17	100K ¼ Watt
R18	100 ¼ Watt
R19	100K ¼ Watt
R20	10K ¼ Watt
R21	22 1 Watt
R22	100K ¼ Watt
R23	1K 0.15 Watt 10 mm. standing Pot.
C1	47uF 10 Volt axial
C2	100n 50 Volt polyester
C3	4,7uF 50 Volt Elco rad.
C4	100n 50 Volt polyester
C5	100n 50 Volt polyester
C6	1000uF 16 Volt Elco rad.
C7	100n 50 Volt polyester
C8	47uF 10 Volt axial
C9	100uF 16 Volt Elco ax.
C10	100n 50 Volt polyester
C11	100n 50 Volt polyester
C12	100n 50 Volt polyester
D1	1N4004
D2	1N4004
D3	1N4004
D4	1N4004
D5	1N4004
D6	1N4004
T1	BC547b
T2	BC547b
T3	BC547b
T4	BC547b
T5	BC547b
U1	4081 Quad And
U2	Relais 2x 12V OMRON G2R-2
U3	LM555 timer IC
U4	LM7812 1,5A
U5	4071 Quad Or
U6	LM7805 1A
U7	4049 Hex inv. Buff.
U8	LM555 timer IC
U9	LM555 timer IC
J1	Header 8 pins
J2	Header 8 pins
	Header Socket 8 pins
J3	D15 PCB socket 90º male
J4	Header 2 pins
J5	Header 2 pins
J6	Header 2 pins
	Header Socket 2 pins
	Shrink contacts for Headers
SW1	Dip switch 4x 90º
2	Opto switches 5mm. Gap OPB818 of TT electronics
1	04-01-PCB; circuit board

4.5 Internal electrical connection diagram of 10-slide rotary viewer with motor advance.



4.6 Electronic schematics



4.7 PCB layout